WHAT IS CLAIMED IS:

1. A method of manufacturing an electronic device, comprising the steps of:

providing an IC chip having a memory to store predetermined information and first and second external electrodes provided on front and back sides thereof, respectively;

providing first and second antennae, each having a dumet at one end thereof;

providing a glass tube;

inserting a portion of the dumet of the first antenna into the glass tube;

placing the IC chip on the dumet of the first antenna arranged in the glass tube such that the first external electrode is disposed on a side of the first antenna dumet;

placing a portion of the dumet of the second antenna on the IC chip arranged in the glass tube such that the dumet of the second antenna is disposed on a side of the second external electrode; and

melting the glass tube to fix the IC chip and the dumets of the first and second antennae.

2. The method of manufacturing an electronic device

according to claim 1, wherein the IC chip has a thickness in the range of 0.1 μm to 200 μm.

3. The method of manufacturing an electronic device according to claim 1, wherein the IC chip includes long sides having a length in the range of 0.01 mm to 0.5 mm.

4. The method of manufacturing an electronic device according to claim 1, wherein the first and second antennae are different in length.

5. The method of manufacturing an electronic device according to claim 1, wherein the first and second external electrodes are provided on front and back sides of the IC chip, respectively.

6. The method of manufacturing an electronic device according to claim 1, wherein the dumets are of larger diameter than a length of a diagonal of the IC chip.

7. The method of manufacturing an electronic device according to claim 6, wherein each dumet has a larger diameter than a lead wire of the corresponding antenna.

8. The method of manufacturing an electronic device according to claim 1, wherein the first and second antennae are arranged to be perpendicular to the front and back sides of the IC chip.

9. A method of manufacturing an electronic device comprising the steps of:

interposing an IC chip, which has a memory to store predetermined information and first and second external electrodes provided on front and back sides thereof, between first and second antennae in a glass tube; and

melting the glass tube to encapsulate the IC chip and connections of the IC chip and the first and second antennae.

10. A method of operating an electronic device, the method comprising the steps of:

when a radio wave is to be transmitted from a reader to a transponder, beginning in a state, in which no radio wave is transmitted, transmitting a radio wave, then temporarily stopping transmission of the radio wave, and since a state at that time, sending data in the transponder to the reader from the transponder.

11. The method of manufacturing an electronic device according to claim 9, wherein a temperature, at which the glass tube melts, is 450°C or less.

12. The method of manufacturing an electronic device according to claim 9, wherein at least surfaces of lead wires of the first and second antennae are made of copper.

13. The method of manufacturing an electronic device according to claim 1, wherein a substrate voltage of the IC chip is applied from the antenna coupled to the back side of the IC chip.

14. The method of manufacturing an electronic device according to claim 1, wherein said placing of the IC chip on the dumet of the first antenna arranged in the glass tube includes shaking a jig having a plurality of openings with ultrasonic waves.

15. The method of manufacturing an electronic device according to claim 9, wherein said interposing includes applying pressure of 5-10 MPa to each said dumet.

16. A semiconductor device, comprising:

a semiconductor chip including a memory to record information of an identification number; and

a first antennae and a second antennae operative to transmit said information and respectively coupled to main and back sides of said semiconductor chip;

wherein a gold layer, an antimony layer, and a silver layer are laminated on the back side of said semiconductor chip in order of mention; and

a substrate voltage of said semiconductor chip is applied from the antenna coupled to the back side of said semiconductor chip through said gold, antimony, and silver layers.

17. A semiconductor device according to Claim 16, further comprising:

a surface electrode formed on the main side of said semiconductor chip and coupled to one of said antennae;

a coupling condenser;

a rectifier diode;

a clamp diode;

a first wiring; and

a second wiring;

wherein one side of said coupling condenser is coupled to said surface electrode through said first wiring;

another side of said coupling condenser is coupled to a cathode of said rectifier diode through said second wiring and an anode of said rectifier diode;

an anode of said clamp diode is electrically coupled to the antenna coupled to the back side of said semiconductor chip;

a cathode of said clamp diode is coupled to an inner circuit of said semiconductor chip; and

a capacitance of said coupling condenser is a wiring capacitance between said first wiring and said second wiring.

18. A semiconductor device according to Claim 16,

wherein each of said first antennae is made of one of iron, copper, and copper plated iron.

19. A semiconductor device according to Claim 16,

wherein a long side length of said semiconductor chip is 0.01 mm to 0.5 mm.

20. A semiconductor device according to Claim 17, wherein the thickness of said surface electrode is from 0.1μm to 50μm.

21. A semiconductor device according to Claim 17, wh rein each of said gold layer, said antimony layer, and said silver layer is from 0.1μm to 80μm thick.

22. A semiconductor device according to Claim 16, further comprising:

a glass body;

wherein said g1ass body encapsulates said semiconductor chip.

23. A semiconductor device according to Claim 16, further comprising:

a first and second dumets;

wherein said first and second antennae are coupled to the respective sides of said semiconductor chip through said dumets.

24. A semiconductor device according to Claim 16, wherein each of said antennae includes a lead wire.

25. A semiconductor device according to Claim 23, wherein said dumets are nickel-iron alloy.

26. A semiconductor device according to Claim 23,

wherein said dumets are copper plated.

27. A semiconductor device according to Claim 22, wherein a material of said glass body is lead glass.

28. A semiconductor device according to Claim 22, wherein said glass body has a melting point not exceeding 450 °C.

29. A semiconductor device according to Claim 24, wherein at least surfaces of the lead wires are made of copper.

30. A semiconductor device according to Claim 24, wherein a wire material of said semiconductor chip includes one of copper, tungsten, and titanium.

31. The method of manufacturing an electronic device according to claim 2, wherein the first and second external electrodes are provided on front and back sides of the IC chip, respectively.

32. The method of manufacturing an electronic device according to claim 3, wherein the first and second external

electrodes are provided on front and back sides of the IC chip, respectively.

33. The method of manufacturing an electronic device according to claim 4, wherein the first and second external electrodes are provided on front and back sides of the IC chip, respectively.